

[0015] FIGS. 4A-4E show a method of folding an exemplary embodiment of the sterilization wrap into an envelope fold.

[0016] FIGS. 5A-5E show a method of folding an exemplary embodiment of the sterilization wrap into a square fold.

[0017] Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the invention.

#### DEFINITIONS

[0018] As used herein, the term “nonwoven” means a web having a structure of individual fibers or threads which are interlaid, but not in an identifiable manner as in a knitted fabric. Nonwoven fabrics or webs have been formed from various processes such as, for example, meltblowing processes, spunbonding processes, and bonded carded web processes. The basis weight of nonwoven fabrics is usually expressed in ounces of material per square yard (osy) or grams per square meter (gsm) and the fiber diameters are usually expressed in microns. (Note that to convert from osy to gsm, multiply osy by 33.91).

[0019] As used herein, the term “spunbonded or spunbond” refers to small diameter fibers which are formed by extruding molten thermoplastic material as filaments from a plurality of fine, usually circular capillaries of a spinneret with the diameter of the extruded filaments then being rapidly reduced to fibers as by, for example, in U.S. Pat. No. 4,340,563 to Appel et al., and U.S. Pat. No. 3,692,618 to Dorschner et al., U.S. Pat. No. 3,802,817 to Matsuki et al., U.S. Pat. Nos. 3,338,992 and 3,341,394 to Kinney, U.S. Pat. No. 3,502,763 to Hartman, and U.S. Pat. No. 3,542,615 to Dobo et al., the contents of which are incorporated herein by reference in their entirety. Spunbond fibers are generally continuous and have diameters generally greater than about 7 microns, more particularly, between about 10 and about 20 microns. As used herein, the term “meltblown” means fibers formed by extruding a molten thermoplastic material through a plurality of fine, usually circular, die capillaries as molten threads or filaments into converging high velocity, usually hot, gas (e.g. air) streams which attenuate the filaments of molten thermoplastic material to reduce their diameter, which may be to microfiber diameter. Thereafter, the meltblown fibers are carried by the high velocity gas stream and are deposited on a collecting surface to form a web of randomly disbursed meltblown fibers. Such a process is disclosed, for example, in U.S. Pat. No. 3,849,241 to Butin et al., the content of which is incorporated herein by reference in its entirety. Meltblown fibers are microfibers which may be continuous or discontinuous with diameters generally less than 10 microns.

[0020] As used herein, the term “bicomponent” refers to fibers that can be made from a method of extruding two polymers from the same spinneret with both polymers contained within the same filament.

#### DETAILED DESCRIPTION OF REPRESENTATIVE EMBODIMENTS

[0021] Reference will now be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way

of explanation of the invention, and not meant as a limitation of the invention. For example, features illustrated or described as part of one embodiment can be used with another embodiment to yield still a third embodiment. It is intended that the present invention include these and other modifications and variations.

[0022] It is to be understood that the ranges mentioned herein include all ranges located within the prescribed range. As such, all ranges mentioned herein include all sub-ranges included in the mentioned ranges. For instance, a range from 100-200 also includes ranges from 110-150, 170-190, and 153-162. Further, all limits mentioned herein include all other limits included in the mentioned limits. For instance, a limit of up to 7 also includes a limit of up to 5, up to 3, and up to 4.5.

[0023] A sterilization wrap 10 is provided that is used in a sterilization procedure for sterilizing surgical instruments and supplies. Sterilization wrap 10 is made of a first sheet 12 that can be either a single layer or laminate or may be a double layer or laminate. A second sheet 14 is attached to the first sheet 12 such that instrument trays 40, instruments 42, and other items desired for sterilization may be placed thereon. The second sheet 14 provides strength to the sterilization wrap 10 so as to resist tearing or strike through of the sterilization wrap 10 by the items placed onto the sterilization wrap 10 during transport or storage.

[0024] An exemplary embodiment of the sterilization wrap 10 is shown in FIG. 1. As shown, an instrument tray 40 having instruments 42 therein is placed onto the sterilization wrap 10 that is made of the first and second sheets 12 and 14. The second sheet 14 provides an additional layer of strength and durability to the sterilization wrap 10 during initial wrapping, sterilization, transportation, and storage of the sterilization wrap 10. The second sheet 14 can be variously shaped and sized in order to accommodate variously sized items to be sterilized.

[0025] The first sheet 12 may be any type of material used in sterilization wraps 10. For example, the first sheet 12 may be a woven material such as cloth made from cotton and/or polyester. The first sheet 12 may also be made of non-woven materials such as KIMGUARD® Sterilization Wrap available from Kimberly-Clark Corporation of Neenah, Wisc. The first sheet 12 may be a single layer of material or may be a laminate such as a spunbonded/meltblown laminate or a spunbonded/meltblown/spunbonded laminate. Various types of material that can be used in construction of the first sheet 12 and associated methods of manufacture may be found in U.S. Pat. Nos. 5,879,620; 6,406,674; and 6,767,509; the entire contents of which are incorporated by reference herein in their entirety for all purposes.

[0026] The second sheet 14 is an additional layer or laminate that is applied to the first sheet 12 in order to impart improved strength characteristics. The second sheet 14 may be made of the same material as the first sheet 12 or may be constructed of a different material. For example, the second sheet 14 may be made from a foam, a woven-web, a high loft material, and/or a bicomponent spunbond material in accordance with various exemplary embodiments. The second sheet 14 may be bicomponent spunbond material made of varying polymers such as nylon, PET, etc. The material selected for the second sheet 14 may be selected so as to withstand the temperature imparted thereon during sterilization.